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Publishing in the Point-and-Click Universe

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THE TRAGEDY OF CLOSED MEDIA

The great idea of electronic media, interactive and universal, seems to promise great freedom and possibility. Yet it also harbors many sinister restrictions. I am very concerned with the restrictive and even repressive directions of electronic media, which threaten to create a Balkanized, imprisoning world just when we thought we were being freed.

They are closed and cannot be used together. Books and journals are compatible, they can share the same desktop. But there is no way to make marginal notes in a CD-ROM, and there is no way to quote from it or link to it.

The alleged standards go in the wrong directions. Current "multimedia standards" are built on a closed-unit philosophy; no one else may connect data to them. Multimedia objects are closed encapsulations that do not allow interconnection between documents. This is a dead-end world.

Not connecting. The central issue is interconnection and re-use of material; and systems currently being designed do not address this problem. (Although some exciting exceptions, such as World Wide Web, are beginning to appear on the Internet.)

Artificial boundaries. Even on networks, in "conferences" and "forums," alleged boundaries of subjects are sternly administered according to the whim of whoever runs them.

THEY'VE GOT IT ALL WRONG

Great headlines and hoopla presently attend the new media activities of large corporations. The Full Service Network in which Time-Warner claims to be investing five billion dollars, for instance, appears to be predicated on our believing that they

switch points of view in a baseball game. These are scarcely the interactive media some of us foresee and want.

At another level, industry initiatives to track copyright are also limited in thinking. For instance, the "SMPTE header initiative," by the Society of Motion Picture and Television Engineers, will be placing copyright notices in the headers of files. This assumes that entire files will be accessed by users.

Many allegedly far-seeing computer applications are ways of simulating paper. Macintosh "WYSIWYG" applications ("What You See Is What You Get"), such as word processing and spreadsheet, usually simulate paper. And a program called Adobe Acrobat-- a way of transmitting documents between computers-- mimics paper, and its documents cannot be linked into from outside.

All these approaches fail to see the great possibilities.

THEY DON'T UNDERSTAND WHAT WE NEED

We get most of our information in small amounts, echoed and borrowed: quotes, clips, summaries, digests, reviews. This flexibility, availability in the world of paper, we are losing in digital media. We have more and more types of media, but not good ways of using them together.

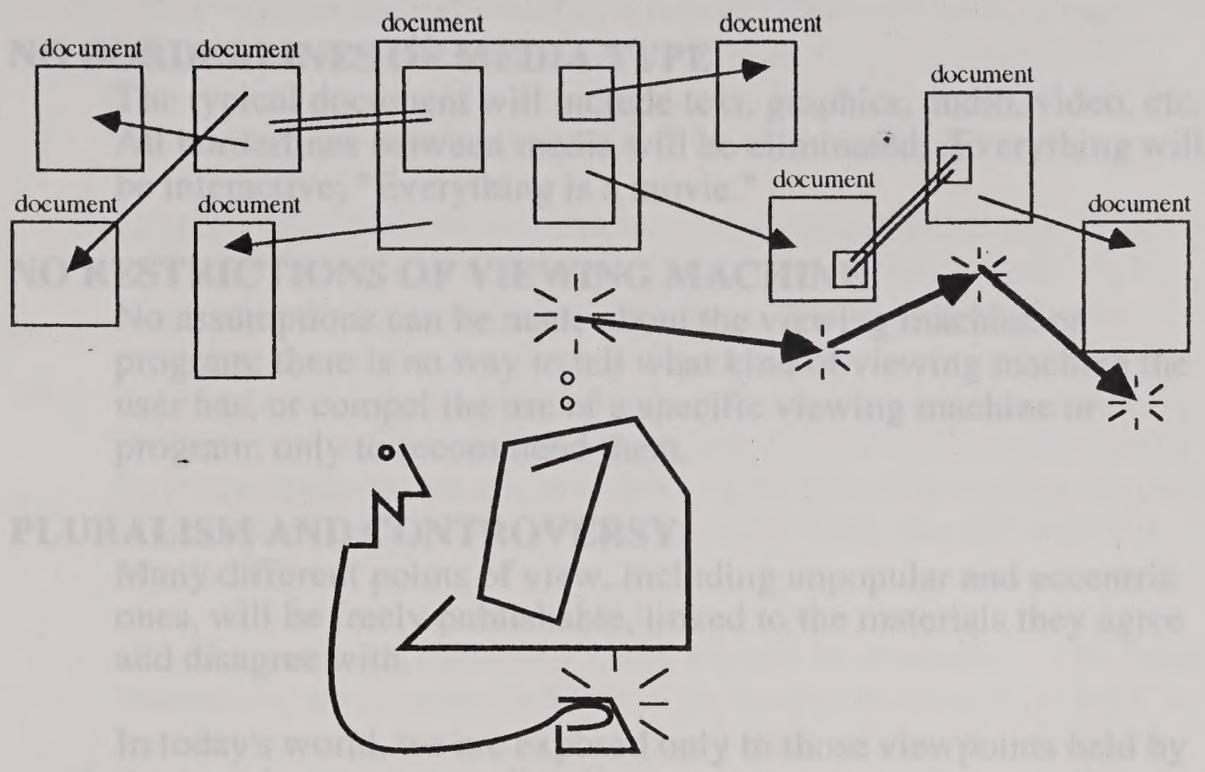
What we need is *unbounded on-line media with compatible connections*-- for scholarship, controversy, anthologizing, understanding, the reworking of ideas, and freedom. We need interconnection without boundaries and the ability to re-use in new contexts.

The problem is how to allow everything to be combined, while still keeping ownership and context sorted out. We believe we have found a way.

THE POINT-AND-CLICK UNIVERSE

Let us talk about the unified, generalized hypermedia world that I foresee for users of all ages, skills and interests.

The typical user of the Twenty-First Century sits at a screen, making choices in unpredictable directions, drawing material out forever.



There's no telling where the user will go next. He or she sends for the content implicitly, by pointing and clicking, or by whatever interface gestures become popular at a given time. The actual purchase of the materials is formally ordered by the user's screen machine.

The user does not have to buy whole documents. Instead, she or he simply selects (and purchases) *the next fragment desired.* These may add up to whole documents, or not. The user will only draw out a small, unpredictable part of each document at a time, jump from document to document like a squirrel from branch to branch, passing through one document on the way to another, purchasing just that moment's portion.

This does not imply that we will lose our ability to think, concentrate, or study deeply. Rather, this quick perusal will be a vital form of search, the principal access method by which we find the materials we most need to master.

'JUST CONNECT AND KEEP GOING'

The reader need not master computerish styles of interaction; she or he need only start and one document and click across the universe from there. It will be unnecessary to learn commands. The reader will be able to point and click to travel inside a document, or to travel between documents on bridges of interconnection. Even a child should be able to find her or his way around.

NO BORDERLINES OF MEDIA TYPE

The typical document will include text, graphics, audio, video, etc. All borderlines between media will be eliminated. Everything will be interactive; "Everything is a movie."

NO RESTRICTIONS OF VIEWING MACHINE

No assumptions can be made about the viewing machine or program: there is no way to tell what kind of viewing machine the user has, or compel the use of a specific viewing machine or program, only to recommend them.

PLURALISM AND CONTROVERSY

Many different points of view, including unpopular and eccentric ones, will be freely publishable, linked to the materials they agree and disagree with.

In today's world, we are exposed only to those viewpoints held by those with access to media. Open controversy and argument are not well represented by existing systems.

This is not the democratic ideal. For the vitality and viability of tomorrow's world, this must be changed.

GENERALIST, NO BOUNDARIES OF SUBJECT

This is a medium for publishing in all areas. Indeed, since there are not really boundaries between different areas, all publishing methods that restrict themselves to given areas are hobbled.

There will be no boundaries to categories; you are not restricted to the way that someone else sees the world.

A document may be of any size, spread across many disks in many places. Anyone may publish connections to the document.

The network is a seamless whole, and all its contents a unified docuverse.

The universe connects in all directions. There are no really sharp lines between subjects, and Generalists are those people who pursue their interests without regard to artificial boundary lines. There are more and more brilliant generalists throughout the world, but the existing publication media subdivide the world of ideas and information artificially. Tomorrow's world will not.

POPULIST AND UNIVERSAL

This cannot just be for the wireheads, early adopters, elite; it must

These matters are not merely technical. They are moral issues about freedom that affect our entire future.

Moral precept: people must be free to read anything.

Correlate: we must be free to jump into a document at any place, and use it according to our own preferences. (This is contrary to some people's accustomed prerogatives. Many authors like to imprison the reader, and "computer-assisted instruction" is largely based on such imprisonment.) We believe the reader must always be free to go back, turn the page or fast-forward. The author must be free to suggest but not to impose. Our model is turning the page of a book: the author has put the pages in order, but the reader is free to skip.

Moral precept: all hypertext jumps should be reversible. (In many interactive media now on the market, the reader cannot go back to previous places, but is swept along. This is a form of imprisonment.)

Moral precept: everyone must be free and equal to publish, to comment, to publish links, to quote.

Moral precept: the system must not keep records of who sends for what; otherwise reading becomes a political act.

THE STABILITY OF LITERATURE

"Literature" is what remains after all is said and done. Tomorrow's media may arrive faster, but they must not go away faster; we must have the same certainty of re-use that we have known in the paper world. We need to know the material will be addressable in the same form and the same way, decades from now.

RIGHTS OF THE PUBLISHER

Many computer people naively think that copyright will go away. But it cannot. Copyright is not an imposition; it is the compromise under which things are made available.

Thus the new system must extend it inconspicuously and innocuously. Pragmatically, it is necessary to entice rightsholders to participate, or materials will be available only under the gravest restrictions. Our point-and-click universe must work in a world of copyright law; but we must make copyright and royalty innocuous and smooth.

THE SYSTEM WE HAVE DESIGNED

Xanadu™ on-line publishing is actually a business method we

Digitized by the Internet Archive
in 2025

https://archive.org/details/publishinginpoin00tedn

A WIN-WIN BUSINESS ARRANGEMENT

But it is the business model that is central; we believe we have found a unique and precise arrangement for selling documents on line that is beneficial to all parties.

Our system invites publishers to agree to certain principles within the Xanadu system, but in no way changes their rights outside the Xanadu publishing universe.

RE-USE

Anyone may publish links to any document already on Xanadu. Likewise anyone may re-use material already on Xanadu as boilerplate, as long as that material is re-used by transclusion-- pointing at it-- rather than by copying. This assures that every new use will be bought from the original publisher.

These arrangements are built into our contracts.

THE XANADU CONTRACTS

The principal parties to the Xanadu contracts are the publisher, the reader and the service provider.

The publisher claims that he, she or it has the right to publish the specific material. The publisher assumes legal responsibility for contents (this is the legal definition of "publisher"). The publisher relinquishes any rights to control transclusion, linkage, sequence of purchase, or size of purchase.

The publisher agrees to pay for storage of the material.

The Xanadu service provider, like a printer, is not involved with the contents of the published material, but simply stores them and serves them up on demand. The service provider promises integrity of document and correct delivery of contents and royalties.

The reader agrees to pay for delivery of the material, including the publisher's royalty. The reader may send for any portion of a document, typically a small increment, or may send for linked material in another document.

The reader agrees to pay the appropriate charges and the royalty specified by the publisher.

The reader agrees to terms of sale, especially agreeing not to redistribute or republish the material, except by pointing to it from other digital documents (transclusion), thus assuring that further

Anyone may publish anything connected to already-published material in the Xanadu network (comments, endorsement, illustration, disagreement...)

Connecting to one Xanadu station connects you to all-- all other stations and their stored documents and data objects.

All data structures are welcome and connectable; there are no closed objects.

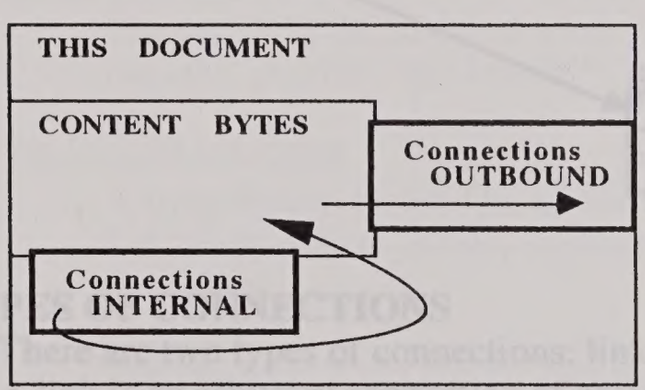
THE GENERAL DATA MODEL

The structure of Xanadu documents, or objects, is highly generalized.

Everything is owned. All links and transclusions are applicative; they add nothing to the data, no embedded markers or "anchors." Thus links and transclusions are added from the outside.

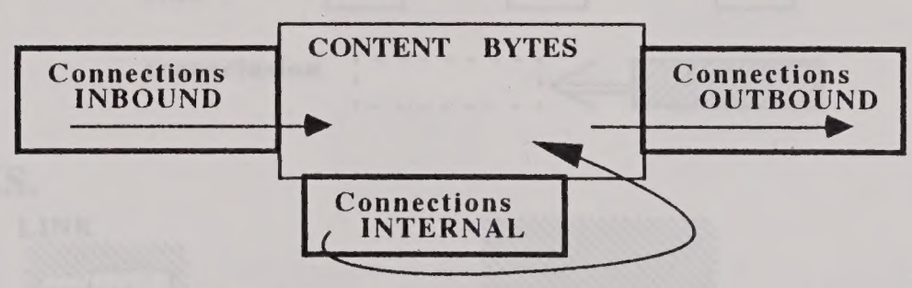
1. GENERAL MODEL OF A DOCUMENT.

A document consists of contents bytes (text, graphics, etc., originating in this document), and connections both in and out of the document.



SYMMETRY

In relation to other documents, these connections create a symmetrical structure of connections. It is important to understand this symmetry.



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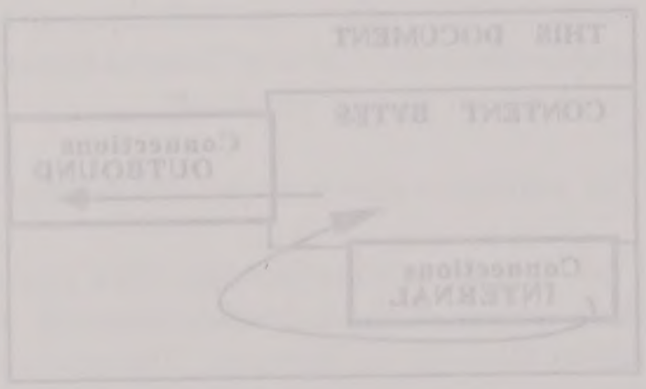

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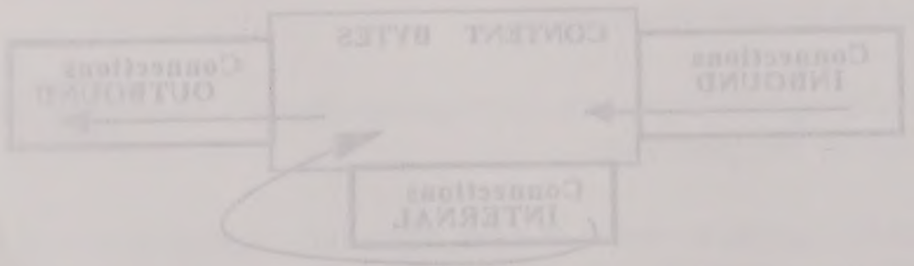
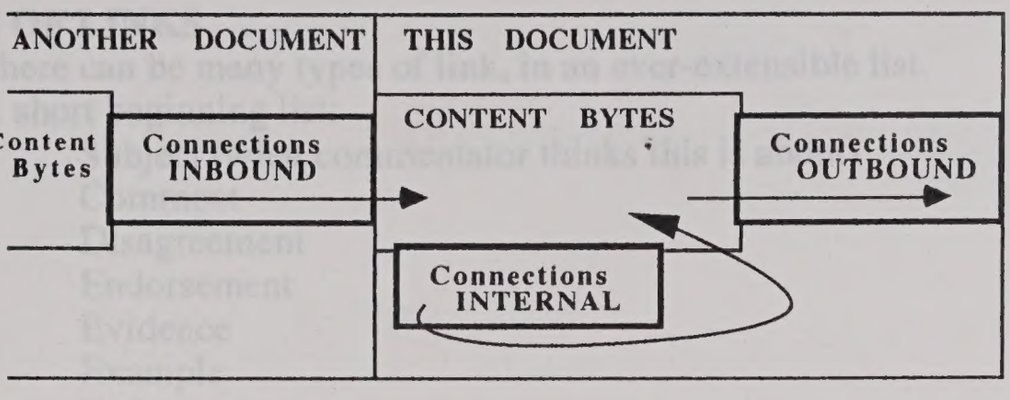
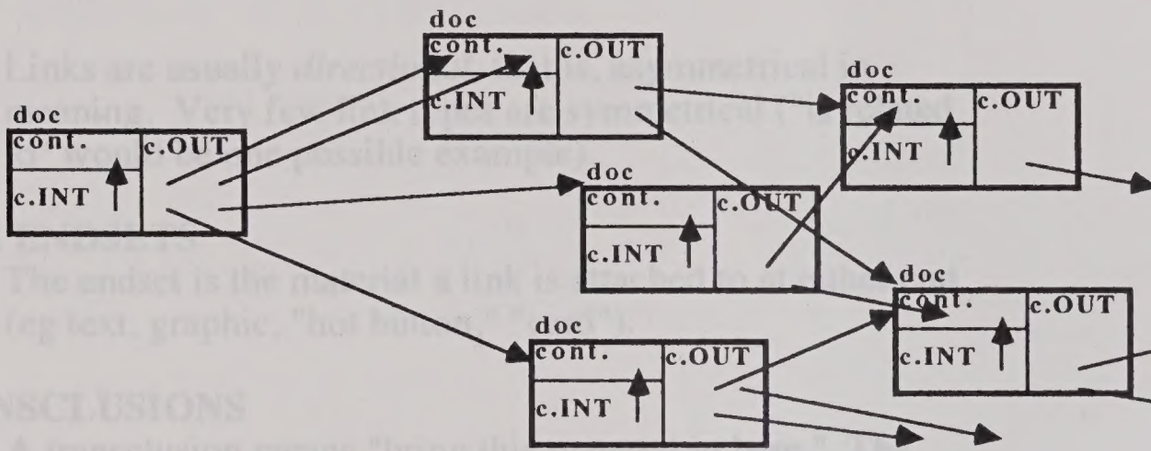




Connections into a document are owned by other documents where they originate.

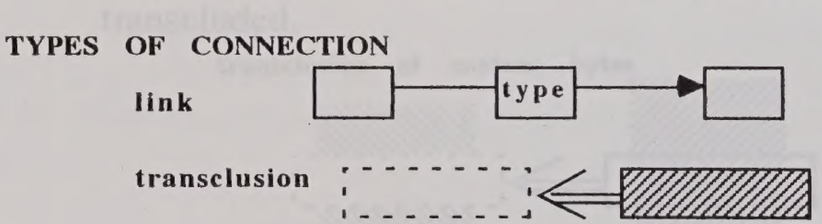
THE PARTS MAKE A DOCUVERSE

Taken all together, these connected documents make up a docuverse. No other parts are needed.

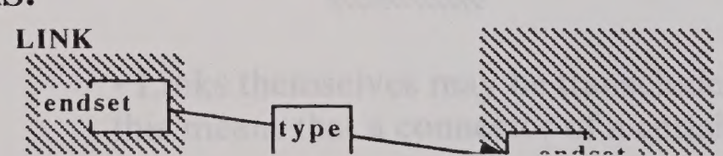


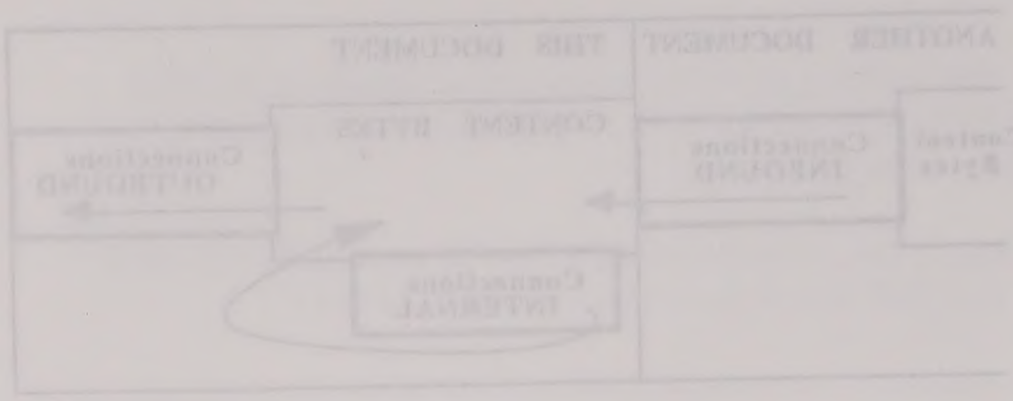
2. TYPES OF CONNECTIONS

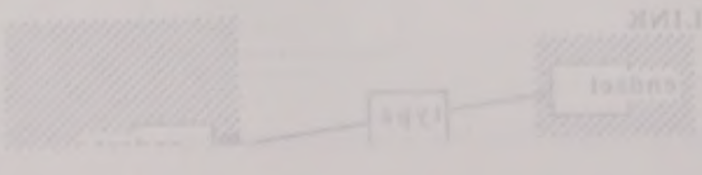
There are two types of connections: links and transclusions.
A link is an arbitrary connection of any type.
A transclusion means a new instance: "bring in this material here," even though place of origin is different.



LINKS.







TYPES OF LINKS

There can be many types of link, in an ever-extensible list. A short beginning list:

- Subject (what commentator thinks this is about)
- Comment
- Disagreement
- Endorsement
- Evidence
- Example
- Endorsement
- Graphical illustration

LINK DIRECTIONALITY, VISIBILITY, FOLLOWABILITY

All Xanadu links can be seen from either end and followed from either end. Some people call this "bidirectional." This is incorrect. All our links are *bivisible* (can be seen from both ends) and *bifollowable* (can be followed from both ends).

Links are usually *directional*, that is, asymmetrical in meaning. Very few link types are symmetrical ("is related to" would be one possible example).

LINK ENDSETS

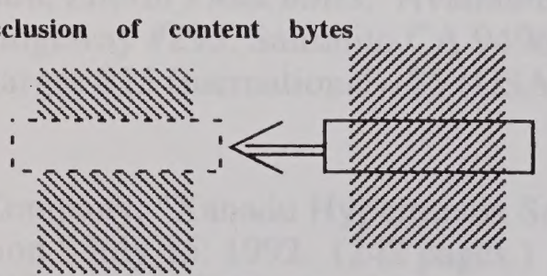
The endset is the material a link is attached to at either end (eg text, graphic, "hot button," "card").

TRANSCLUSIONS

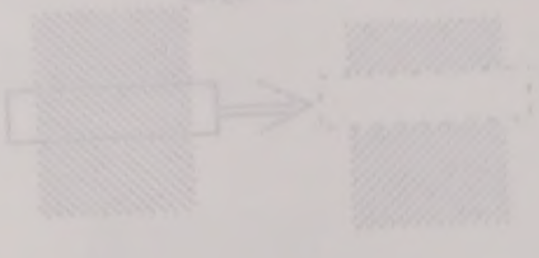
A transclusion means "bring this material in here." The formal definition: ***virtual inclusion across a document boundary.***

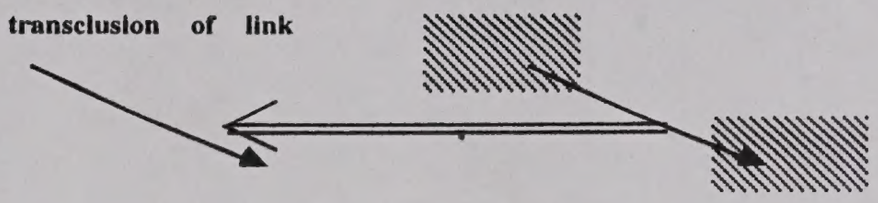
The material is not copied into the new document, but always newly-purchased from the original, or a functioning instance of the original.

- Content bytes, such as text and graphics, may be transcluded.



- Links themselves may be transcluded. In practice this means that a connector of a certain type, and



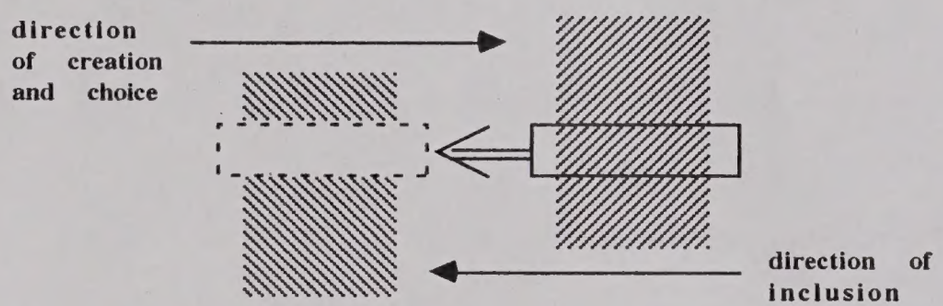


DIRECTIONS OF A TRANSCLUSION

Transclusions, like links, are bivisible and bifollowable.

Transclusions are directional. To simplify things we say that a transclusion that brings in material is an outbound connection. But there are of course two directions: the direction in which the material has been chosen and the transclusion has been created (the *direction of creation and choice*), and the direction in which the material flows to be included (the *direction of inclusion*).

DIRECTIONS OF A TRANSCLUSION

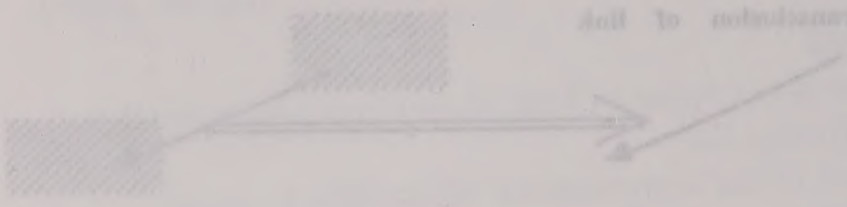


There will be many types of endsets. These types will simply tell the system where the link is considered to be attached.

CONCLUSION

These general remarks are intended to show a way of thinking about media and the future, and what needs to be done to get there.

REFERENCES

1. Nelson, Theodor Holm, *Literary Machines*. Available from Mindful Press, 3020 Bridgeway #295, Sausalito CA 94965, USA; price $25. Handling charges $15 (inernational), $5 (USA. and Canada).

2. Xanadu Operating Company, "Xanadu Hypermedia Server Developer Documentation," July 15, 1992. (242 pages.) Available from Mindful Press as XOC DOC, $250 plus $35 handling (international), $10 handling (USA and Canada).